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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/527,660

03/11/2005

David C. Jiles

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EXAMINER

KOSLOW, CAROL M

ART UNIT

PAPER NUMBER

1755

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

03/27/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/527,660

Applicant(s)

JILES ET AL.

Examiner

C. Melissa Koslow

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1755

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 and 6-12 is/are rejected.
- 7) ☒ Claim(s) 2-5, 13 and 14 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 11 March 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 3/9/06.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application
- ☐ Other: ____.

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The Japanese references cited in the information disclosure statement of 9 March 2006 have been considered with respect to the provided English abstracts. It is noted applicants have given the application number for these references, not the publication number.

The later-filed application must be an application for a patent for an invention which is also disclosed in the prior application (the parent or original nonprovisional application or provisional application). The disclosure of the invention in the parent application and in the later-filed application must be sufficient to comply with the requirements of the first paragraph of 35 U.S.C. 112. See *Transco Products, Inc. v. Performance Contracting, Inc.*, 38 F.3d 551, 32 USPQ2d 1077 (Fed. Cir. 1994).

The disclosure of the prior-filed application, Application No. 60/489,697, fails to provide adequate support or enablement in the manner provided by the first paragraph of 35 U.S.C. 112 for one or more claims of this application.

The provisional application only teaches producing manganese substituted cobalt ferrites having the formula $\text{CoMn}_x\text{Fe}_{2-x}\text{O}_4$, where x is 0-1 and $\text{Co}_{1-y}\text{Mn}_y\text{Fe}_2\text{O}_4$, where y is 0-0.8, by mixing powdered oxides of iron, cobalt and manganese, pressing the mixed powders, calcining the pressure body at 1000°C in air for 24 hours, ball milling the calcined material to a size less than 38 microns, recalcining at 1000°C in air for 24 hours, remilling to less than 38 microns, mixing, shaping the mixed powders, sintering the shaped articles at 1350°C for 24 hours in air and cooling the body by air quenching. Thus the provisional application does not provide adequate support or enablement in the manner provided by the first paragraph of 35 U.S.C. 112 for claims 5-14, for the embodiments of claim 1 where M is Cr, Zn, Al, Cu, any mixtures thereof

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and the combination of any of these metals with manganese, for the ranges in claim 1, the use of carbonates in the process of claim 1 and for the range of greater than 0.8 to about 0.95 in claim 4.

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: Reference number 708 in figure 7. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The disclosure is objected to because of the following informalities: Page 8 defines aluminum as a transition metal. This definition is counter to all accepted chemical definitions of "transition metal" since aluminum does not meet any of the known definitions of "transition metal" which are metals having an incomplete d subshell, metals that can give rise to cations having an incomplete d subshell or are in groups 3-12 of the IUPAC periodic table, which correspond to the B Groups in the CAS periodic table. While applicants can be their own lexicographer, they cannot define a term completely repugnant to its chemical definition. It is noted that zinc meets the second definition and thus applicants' calling zinc a transition metal is acceptable. Appropriate correction is required.

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The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The subject matter of claim 5 and the relative amounts of silver and nickel in claim 11 are not taught in the specification.

Claim 6 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim, or amend the claim to place the claim in proper dependent form.

Claim 6 teaches the metal substituted into cobalt ferrite is a transition metal, which reads on any transition metal; but claim 1 teaches the metal substituted into cobalt ferrite is selected from the group consisting of Mn, Cr, Zn, Al, Cu and mixtures thereof. Thus claim 6 is broader in scope than claim 1 and thus does not further limit claim 1.

Claims 10 and 11 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claims, or rewrite the claims in independent form.

Claims 10 and 11 are directed to produce metal bonded cobalt ferrite composites. Claim 1 is directed to the process of producing a sintered metal substituted cobalt ferrite body, where there is no binder. Thus they are broader in scope than claim 1 and thus do not further limit claim 1.

Claim 6 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

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The specification teaches cobalt ferrite is substituted with Cr, Mn, Al, Zn, Cu and mixtures thereof. This teachings does not provide support for claim 6 which states any transition metal is substituted into cobalt ferrite.

Claims 1 and 6-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 6 is indefinite since it teaches the metal substituted into cobalt ferrite is a transition metal, which reads on any transition metal; but claim 1 teaches the metal substituted into cobalt ferrite is selected from the group consisting of Mn, Cr, Zn, Al, Cu and mixtures thereof. Thus claim 6 is broader in scope than claim 1 and thus improperly dependent upon it.

Claims 1 and 7-9 are indefinite since it defines aluminum as a transition metal. This definition is counter to all accepted chemical definitions of "transition metal" since aluminum does not meet any of the known definitions of "transition metal" which are metals having an incomplete d subshell, metal which give raise to cations having an incomplete d subshell or are in groups 3-12 of the IUPAC periodic table, which correspond to the B Groups in the CAS periodic table. While applicants can be their own lexicographer, they cannot define a term completely repugnant to its chemical definition.

Claims 10 and 11 are directed to produce metal bonded cobalt ferrite composites. Claim 1 is directed to the process of producing a sintered metal substituted cobalt ferrite body, where the is no binder. Thus they are broader in scope than claim 1 and thus are indefinite since they improperly depend from claim 1.

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The wording of claim 12 makes it indefinite. The claim refers to sintered organically bound powder, but the sintering step removes the organic material. The description of the claimed mixing, forming and sintering steps in the body of the claims make it difficult to understand. It is suggested to rewrite this claim as:

The method of claim 1 further comprising adding an organic binder to the remilled mixed powder and wherein the sintering step occurs in air at approximately 1350°C for 24 hours and cooling the resulting sintered metal substituted cobalt ferrite in the furnace to about 850°C at a cooling rate of about 4°C per hour and the removing the partially cooled ferrite from the furnace to room temperature air.

Claims 2-5, 13 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 1, 6-9 and 12 would be allowable if rewritten to overcome the rejection under 35 U.S.C. 112, second paragraph, set forth in this Office action.

There is no teaching or suggestion in the cited art of record of producing metal substituted cobalt ferrite by the claimed method. There is no guidance in the art for the calcining and sintering conditions to produce producing metal substituted cobalt ferrite where the metal is Cr, Zn, Al, Cu, mixtures thereof and manganese in combination with at least one of Cr, Zn, Al and Cu. While the cited art teaches manganese substituted cobalt ferrite, either the calcining conditions are outside those claimed with no suggestion to modify the taught temperature and/or time so they fall within the claimed ranges (the articles by Fayek et al and Mendonca et al) or the sintering conditions are outside those claimed with no suggestion to modify the taught

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temperature and/or time so they fall within the claimed ranges (the article by Lee et al and U.S. patent 2,882,236).


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa Koslow whose telephone number is (571) 272-1371. The examiner can normally be reached on Monday-Friday from 8:00 AM to 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jerry Lorengo, can be reached at (571) 272-1233.

The fax number for all official communications is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cmk
March 23, 2007


C. Melissa Koslow
Primary Examiner
Tech. Center 1700